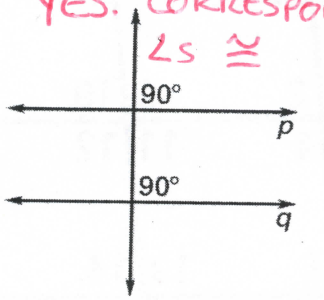
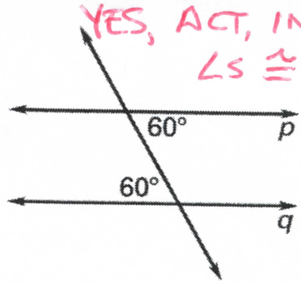
Name ANSWER KEY **Unit 3 Worksheet 5**

Is there enough information to prove that lines *p* and *q* are parallel? If so, state the postulate or theorem you would use.

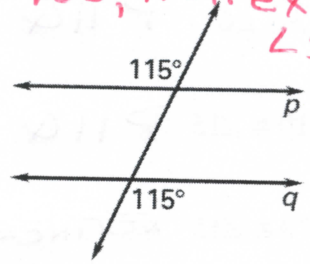
1. YES. CORRESPONDING ∠s ≅



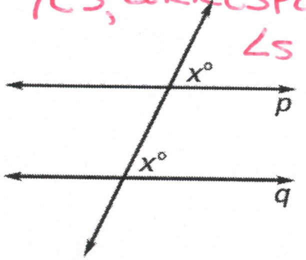
2. YES, ALT. INT. ∠s ≅



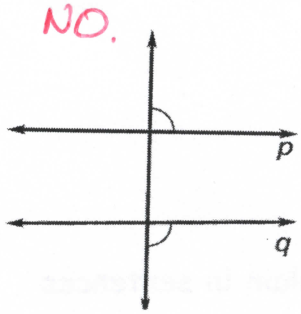
3. YES, ALT. EXT. ∠s ≅



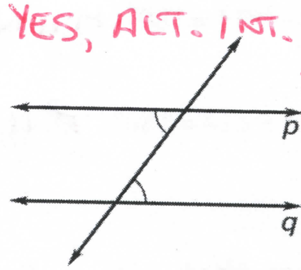
4. YES, CORRESPONDING ∠s ≅



5. NO.

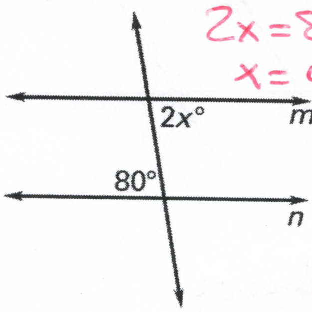


6. YES, ALT. INT. ∠s ≅



Find the value of *x* that makes *m* ∥ *n*.

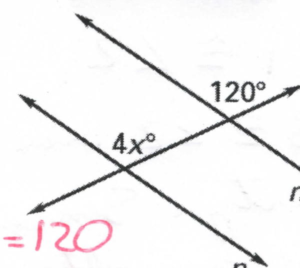
7.



$2x = 80$

$x = 40°$

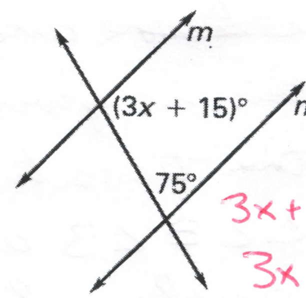
8.



$4x = 120$

$x = 30°$

9.



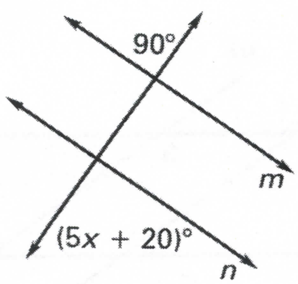
$3x + 15 + 75 = 180$

$3x + 90 = 180$

$3x = 90$

$x = 30$

10.

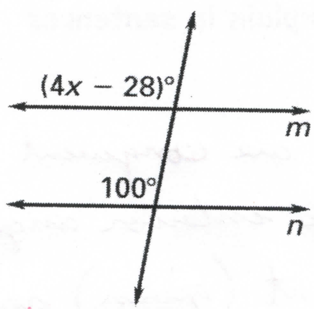


$5x + 20 = 90$

$5x = 70$

$x = 14$

11.

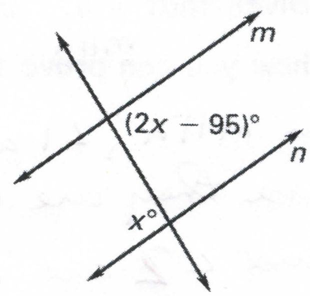


$4x - 28 = 100$

$4x = 128$

$x = 32$

12.



$x = 2x - 95$

$x + 95 = 2x$

$95 = x$

For #13- 18, use the given information to decide if $m \parallel n$, $p \parallel q$, or *neither*.

13) $\angle 2 \cong \angle 11$ ~~[illegible]~~ m ll n

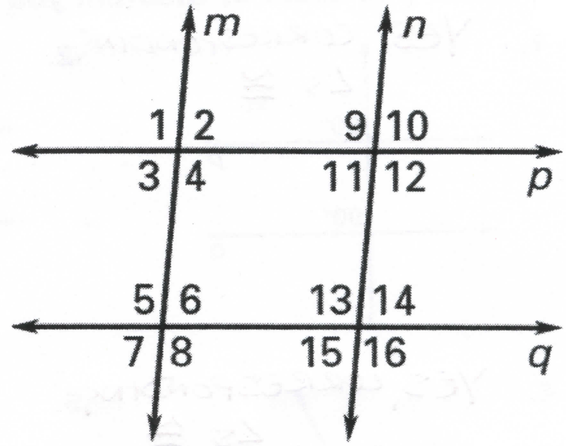
14) $\angle 3 \cong \angle 6$ P ll Q

15) $\angle 10 \cong \angle 15$ P ll Q

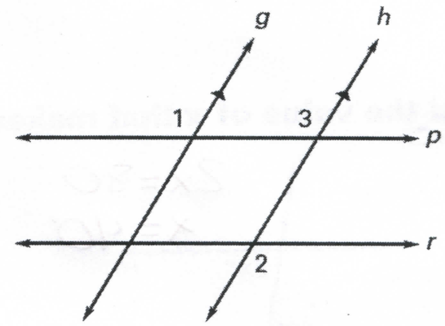
16) $\angle 14 \cong \angle 15$ NEITHER

17) $\angle 4 + \angle 11 = 180°$ M ll N

18) $\angle 12 + \angle 14 = 180°$ P ll Q

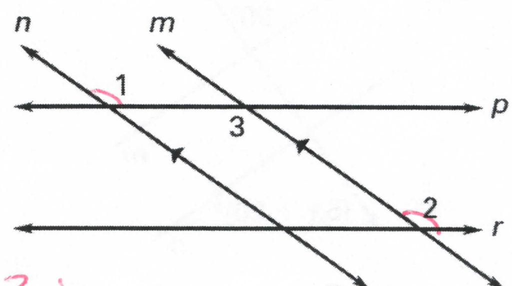


19) Given that $g \parallel h$, $\angle 1 \cong \angle 2$, explain in sentences how you can prove that $p \parallel r$.



∠1 ≅ ∠3, they are ~~alternate~~ CORRESPONDING ~~interior~~ angles. ∠1 ≅ ∠2, this is given. ∠3 ≅ ∠2 via the transitive property. Since ∠2 ≅ ∠3 and they are alternate exterior angles, line P ll line R

20) Given that $g \parallel h$, $\angle 1 \cong \angle 2$, explain in sentences how you can prove that $p \parallel r$. m ll n



Given m ll n, ∠1 and ∠3 are congruent because they are alternate interior angles. ∠1 and ∠2 are congruent (given) so ∠2 is congruent to ∠3 via the transitive property. ∠2 and ∠3 are alternate interior angles that are congruent so line P ll line R